

# CAMA System Depreciation and Effective Age



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## Answers from AssessorNET

## GENERAL DISCUSSION GROUP—

**Q. Alvin Lankford, Georgetown, Texas**

I am looking for some help on classing and depreciation schedules for "old town" homes. The homes I need help with are those built from the late 1800's through about 1950 located in the downtown areas of our local towns. We currently have them classed and grouped by the style of home such as Victorian, Bungalow, etc. Our depreciation schedule is the same for these homes as the newer built homes. We have noticed an influx of home buyers/remodelers in these areas, which are changing the values drastically and need some help catching up to the market. Does anyone have a classing and depreciation manual on these types of homes that I could use as a guide for developing our own?

**A. Bill Healey, Cumberland, Maine**

We had a similar situation here. We completed a revaluation project in April of this year, and while testing the model, we found that it was not working for older homes built between 1800 and 1920. We determined that there was no way other than grading the buildings much higher than they should be to capture the intrinsic value of the older homes. I didn't feel comfortable with this approach, so I decided to create a new building style in our database called "antique." We gave this class a higher price per square foot than the standard Cape, Colonial, etc. and applied it uniformly to most of our older dwellings. I say most because not every older home has antique characteristics. We used our best judgment in classifying these properties. I did have to adjust the grade of some dwellings downward because they were over-graded in the past, but my depreciation schedule did not have to be changed.

**A. Allan Booth, Newport, Rhode Island**

We have a number of "Colonial" homes. Sales history has proven that true "Colonial" homes sell for more than similar looking, newly (last 75 years) constructed homes. Our cost manuals, since 1992, have included a classification for "Historic Colonial" homes with the appropriate costs. Some are in perfect restored condition and some haven't had work done on them since the fifties. These differences are addressed with condition and depreciation.

**A. Linda Cwiek, North Kingstown, Rhode Island**

When the Town of North Kingstown did a revaluation several years ago, we also had the same problem because people were paying high prices for these older homes. The project manager for our revaluation suggested doing the same, and so a style "Historic," which starts with a higher base price, was created. This was used for homes built in the 1800's. In addition, for those that had been completely rehabbed (and kept the historic characteristics) we added another depreciation table for Rebuilt.

**A. Gil Bulman, CAE, Spartanburg, South Carolina**

We have been successful using an estimated effective age on the older homes. This can be adjusted based on the age and extent of

remodeling or rehabilitation without creating additional classes or depreciation tables. It is applied to replacement costs.

**A. Jimmy Tanner, Louisburg, North Carolina**

I agree with Gil. Appraisers tend to downgrade these homes because they are old, and not all being renovated or having routine maintenance performed. But, once these older historic homes have been renovated, then the effective age must be an important factor. If you grade these homes as they should be (most are really nice quality for the period of construction), and apply the effective ages for being renovated or maintained, then the depreciation tables take care of the rest.

**A. Derek J. Green, Eaton, Ohio**

If you can isolate these parcels in CAMA by style "Colonial/Historic" you could always apply dwelling economic factor. This way you can keep your pricing/depreciation schedule intact. Only downside, factors can be hard to explain to public even if warranted.

**A. Edgar Clodfelter, Adamant, Vermont**

These old, classic, historic homes are prevalent in Vermont. They are typically good quality (or better) construction. If located in some of the desirable village settings they can be quite valuable. In my experience, the real key is to determine an appropriate effective age and condition. Because we have so many older houses in Vermont we have had to develop our own depreciation schedules instead of using the tables that come with the national cost services.

**A. Linda Cwiek, North Kingstown, Rhode Island**

We found that it became too hard to explain to the taxpayer why a 150-year-old house only had 10 percent depreciation and a much newer house had 24 percent depreciation. That was part of our reasoning for creating a style, "Historic," and starting with a higher square foot price. This allowed us to use a depreciation table that allowed for higher depreciation percentages.

**A. Bernard C. Haney, Neptune, New Jersey**

Edgar is exactly right. We have a section known as Ocean Grove. It is on the ocean and on the National Historic Registry. It is essentially a small village of 1,700 parcels consisting of residential, mixed use commercial small hotels and B&B's. We actually had to modify the depreciation table almost in complete reverse, whereby a 200-year-old Victorian home was much more valuable than a two-year-old "make believe" Victorian home. The more age, and upkeep of course, the more value. 200-year-old clunkers are still 200-year-old clunkers, but 200-year-old restored homes carry huge values (on 30 x 60 lots I might add).

**A. Mike Milano, Boston, Massachusetts**

Linda commented that the difficulty in explaining the depreciation rationale to a taxpayer was the driving force to develop a cost table that would allow for some flexibility in pricing these unique properties. Taking that one step further, the data is what it is and there is no question that given the



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“The goal of the Assessor is not cost, but market value. Cost is merely the avenue to market value ...”



Property Assessment Valuation IAAO Textbook.



## Goal is Market Value

Property is to be appraised at its fair market value. Fair market value is defined in 32 V.S.A. § 3481 as:

The price which the property will bring in the market when offered for sale and purchased by another, taking into consideration all the elements of the availability of the property, its use both potential and prospective, any functional deficiencies, and all other elements such as age and condition which combine to give property a market value.



## Cost Approach

Sum of estimated land value and estimated depreciated cost of the building and other improvements.

Value = Land Value + Improvement Value

IV = (Replacement Cost New – Depreciation)  
RCNLD



## Cost Approach Works best:

- New Improvements
- Sale and Income data scarce
- Special Purpose Properties
- Industrial Properties

The difficulty in using the Cost Approach with older improvements is determining **Depreciation**, and it's significant other, **Effective Age**.





## Market Adjusted Cost Approach

**Replacement Cost Tables** = Marshall & Swift

(Base Adjusted by Time/Location)

Tables 1 - 7

**Depreciation** = Age/Effective and Condition

Table 40

**Land Tables** = Land Value

(Housesite Value, Acres, Frontage)

Tables 43, 44, 45, 57, 58, 59, 60

**Site Improvements** = Water and Septic

Table 49

**Outbuildings** = Marshall & Swift

(Detached Structures)

Table 46





# Market Adjusted Cost Value

## **Land Value**

(Market Based)

+

## **Building Value**

(Town Specific Adjusted M&S Tables and  
Depreciation)

+

## **Outbuildings Value**

(M&S Tables)

+

## **Site Improvements**

(Water & Septic Contributory Value)



**All structures are made up of elements that have varying economic lives.**

**Building Element Considerations:**

Type ( residential, commercial, etc.)

Quality ( grades, style)

Structure ( foundation and framing)

Exterior ( siding, style)

Roof ( type, pitch, cover)

Windows ( type, screens)

Plumbing ( fixtures, type and grade)

Heating and Air Conditioning (type and capacity)

Room and Finish ( flooring, trim, walls)

Bath Details ( number, type)

Many are items that become worn and **depreciate** over time.



**Depreciation:** The loss in value, from all causes, of property having a limited **economic life**.

### **Types of Depreciation:**

- **Physical Deterioration -**  
The loss in value due to wear and tear over time.
- **Functional Obsolescence -**  
The loss of value due to changes in style, taste, technology, needs and demands.
- **Economic Obsolescence -**  
The loss of value due to factors external to the property.





## Depreciation/Obsolescence: Curable and Incurable

- **Curable -**

Repairing or replacing obsolescence or physical loss at a reasonable cost. The repair must make economic sense.

Example - Replacing a furnace.

- **Incurable -**

When the defect in an asset becomes too costly to repair.

Example - Replacing Foundation

Example – Small residential dwelling on commercial strip. (Dorset street in South Burlington)



## MicroSolve Residential Depreciation Tables

The MicroSolve computer assisted mass appraisal (CAMA) system can calculate physical depreciation on **residential improvements, mobile homes and camps** in several ways.

The following will describe how the user can utilize table lookups based on age (or effective age) and condition, or use direct input of physical depreciation.



## I. Direct Input:

Direct Input of Depreciation applied to Dwelling - Example

- Physical Depreciation of 10 percent entered
- 10 percent of the RCN value will be removed
  - Depreciation is “forced” by the user
- Depreciation will remain until deleted from the record.

**Parcel Information**

Parcel ID: 1234EX01    Owner Name: EXAMPLE OF RESIDENTIAL    Owner Name2:   
 Owner Address:    City:    State:    ZipCode:    Status: A

Parcel	History	Land/OB	Sec 1/Pg 1	Sec 1/Pg 2	Sec 1/Pg 3	Valuation	Picture	Note
Floor ID:	1		Plumb Fixt:	10	Effect Age:	0.0		
Floor Cover:	11	Allowance	Plumb Roughn:	1	Life Expect:			
Floor Cov %:	100	%	Total Rooms:	7	Condition:	5	Average	
Wall Height:			Bedrooms:	3	Phys Deprec:	10		
Feature ID:	1		Full Baths:	2	Func Deprec:			
Type:	1	Allowance	Half Baths:		Econ Deprec:			
Quality:	3		Kitchens:	1	% Complete:		%	
Count:	1.0		Fireplce #:	1	%Bus/Rental:		%	
Rate:			Firepl Type:	2	Double	Add to Hsite:	2	Yes
Name:			Year Built:		Add to Hmstd:	2	Yes	

11/07/2013





## **II. Table Lookup: Effective Age Input**

- Depreciation Table based on Age/Effective Age and Condition
- Effective Age reflects condition and utility relative to actual age
- If Physical Depreciation blank, and Effective Age entered – Table Lookup

Example – 150 year old Dwelling  
Improvements to current living standards

Wiring  
Heating System  
Plumbing  
Updated Kitchen  
Modern Bath

Effective Age Say 60 - 70

# CAMA System Depreciation

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## Input Effective Age and Condition = Table Lookup

Parcel Information

Parcel ID 1234EX01 Owner Name EXAMPLE OF RESIDENTIAL Owner Name2

Owner Address 23 FOWLER ROAD City CALAIS State VT ZipCode 05640 Status A

Parcel	History	Land/OB	Sec 1/Pg 1	Sec 1/Pg 2	Sec 1/Pg 3	Valuation	Picture	Note
Floor ID:	1		Plumb Fixt:	10	Effect Age:	60.0		
Floor Cover:	11	Allowance	Plumb Roughn:	1	Life Expect:			
Floor Cov %:	100	%	Total Rooms:	7	Condition:	5	Average	
Wall Height:			Bedrooms:	3	Phys Deprec:	0		
Feature ID:	1		Full Baths:	2	Func Deprec:			
Type:	1	Allowance	Half Baths:		Econ Deprec:			
Quality:	3		Kitchens:	1	% Complete:		%	
Count:	1.0		Fireplce #:	1	%Bus/Rental:		%	
Rate:			Firepl Type:	2	Double	Add to Hsite:	2	Yes
Name:			Year Built:	1900	Add to Hmstd:	2	Yes	

Add Delete SKETCH 11/07/2013



Running Cost System completes Table Lookup for Effective Age and Condition. Used to calculate depreciated amount for RCNLD.

Fills the field of Physical Depreciation from Table 40.

**Parcel Information**

Parcel ID: 1234EX01    Owner Name: EXAMPLE OF RESIDENTIAL    Owner Name2:   
 Owner Address: 23 FOWLER ROAD    City: CALAIS    State: VT    ZipCode: 05640    Status: A

Parcel	History	Land/OB	Sec 1/Pg 1	Sec 1/Pg 2	Sec 1/Pg 3	Valuation	Picture	Note
Floor ID:	1		Plumb Fixt:	10	Effect Age:	60.0		
Floor Cover:	11	Allowance	Plumb Roughn:	1	Life Expect:			
Floor Cov %:	100	%	Total Rooms:	7	Condition:	5	Average	
Wall Height:			Bedrooms:	3	Phys Deprec:	35		
Feature ID:	1		Full Baths:	2	Func Deprec:			
Type:	1	Allowance	Half Baths:		Econ Deprec:			
Quality:	3		Kitchens:	1	% Complete:		%	
Count:	1.0		Fireplce #:	1	%Bus/Rental:		%	
Rate:			Firepl Type:	2	Add to Hsite:	2	Yes	
Name:			Year Built:	1900	Add to Hmstd:	2	Yes	

11/07/2013



# CAMA System Depreciation



Itemized Property Costs					
From Table: MAIN Section 1		Sample Town		Record # 750	
Property ID: 1234EX01		Span #: 354-109-10763	Last Inspected: 04/01/2011	Cost Update: 02/10/2016	
Owner(s): EXAMPLE OF RESIDENTIAL		Sale Price: 0	Book:	Validity: No Data	
Address: 23 FOWLER ROAD		Sale Date: / /	Page:		
City/St/Zip: CALAIS VT 05640		Bldg Type: Single	Quality: 3.00	AVERAGE	
Location: 0		Style: 1.5 Fin	Frame: No Data		
Description: EXAMPLE OF RESIDENTIAL		Area: 1760	Yr Built: 1900	Eff Age: 60	
Tax Map #:		# Rms: 7	# Bedrm: 3	# Ktchns: 1	
		# 1/2 Bath: 0	# Baths: 2		
Item	Description	Percent	Quantity	Unit Cost	Total
<b>BASE COST</b>					
Exterior Wall #1:	WdSidng / Ht=8	100.00		76.62	
<b>ADJUSTMENTS</b>					
Roof #1:	CompShg	100.00			
Subfloor	Wood				
Floor cover #1:	Allowance	100.00		3.93	
Heat/cooling #1:	HW Rad	100.00		1.97	
Energy Adjustment	Good			1.88	
<b>ADJUSTED BASE COST</b>			1,760.00	84.40	148,544
<b>ADDITIONAL FEATURES</b>					
Fixtures (beyond allowance of 8)			2.00	1,360.00	2,720
Roughins (beyond allowance of 1)				550.00	
Fireplaces	1.5 Fin / Double		1.00	5,556.50	5,557
Features #1:	Allowance		1.00	3,250.00	3,250
Porch #1:	WoodDck/Solid/Roof/Ceil		540.00	41.67	22,502
Porch #2:	WoodDck/NoWall/NoRoo		204.00	16.41	3,348
Basement	Conc 8"		992.00	21.32	21,149
Finished Basement	Partition		500.00	30.42	15,210
Garage/Shed #1:	A/1.5S/WdSidng/Ful+Rec		600.00	43.94	26,366
Garage/Shed #2:	Carport/No Data/No		500.00	8.55	4,275
<b>Subtotal</b>					252,920
Local multiplier		1.00			
Current multiplier		1.00			
<b>REPLACEMENT COST NEW</b>					252,920
Condition	Average	Percent			
Physical depreciation		35.00			-88,522
Functional depreciation					
Economic depreciation					
<b>REPLACEMENT COST NEW LESS DEPRECIATION</b>					164,400

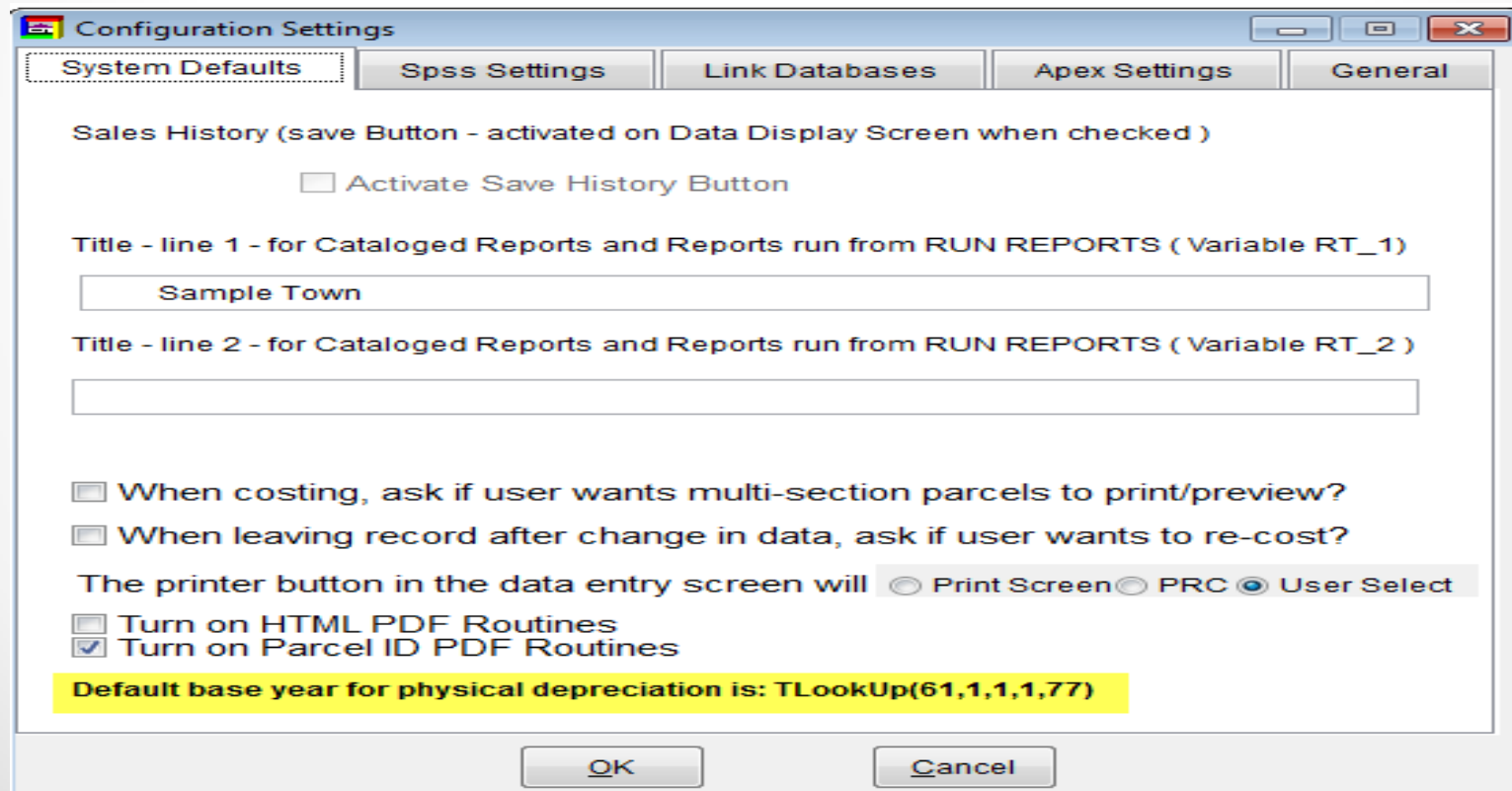


### III. Table Lookup: Effective Age Calculated

Effective Age based on Year Built and Base Year

Base Year is year of completion of reappraisal

Stored in either USIT or new Table 61

A screenshot of a "Configuration Settings" dialog box. The "System Defaults" tab is selected. The dialog contains several settings: "Sales History (save Button - activated on Data Display Screen when checked)" with an unchecked checkbox "Activate Save History Button"; "Title - line 1 - for Cataloged Reports and Reports run from RUN REPORTS ( Variable RT\_1)" with a text field containing "Sample Town"; "Title - line 2 - for Cataloged Reports and Reports run from RUN REPORTS ( Variable RT\_2 )" with an empty text field; three unchecked checkboxes: "When costing, ask if user wants multi-section parcels to print/preview?", "When leaving record after change in data, ask if user wants to re-cost?", and "Turn on HTML PDF Routines"; a radio button group for "The printer button in the data entry screen will" with "Print Screen", "PRC", and "User Select" (selected); and a checked checkbox "Turn on Parcel ID PDF Routines". A yellow highlighted box at the bottom states "Default base year for physical depreciation is: TLookUp(61,1,1,1,77)". "OK" and "Cancel" buttons are at the bottom.

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USIT Form

Equations

Report View

Search string:

Order	Name	Equation	Result	Print
600	&630	lev_bldtyp=0		0
610	exh	TLookup(1,1,11,val_qual,76)&& excep. home multiplier	1.00	0
620	val_qual	iif(val_qual>6,6+val_qual-int(val_qual),val_qual)	3.75	0
630	style_temp	faclevNam('style')	1.5 Fin	
640	num_style	val(substr(style_temp,1,at(' ',style_temp)-1))	1.50	
650	val_frame	facval('frame')	1.00	
660	year_blt	facval('yr_built')	1852.00	
670	base_yr	2016	2016.00	0
680	val_effage	iif(facval('eff_age')>0,facval('eff_age'),base_yr-facval('yr_built'))	60.00	
690	val_effage	iif(val_effage<0,0,val_effage)	60.00	0
700	val_cond	facval('condition')	7.00	
710	PS	0	0.00	0
720	PA	0	0.00	0
730	PL	0	0.00	0

Copy Paste Insert Delete ReNumber Print Rpt Validate

[illegible]





### Table Lookup: Effective Age Calculated

- If Physical Depreciation Blank
- And Effective Age field Blank
  - And Year Built Exists

### Calculated Effective Age from Year Built and Base Year

Example with Base Year 2013

Sale Price:	316,500	Book:	Validity: Yes
Sale Date:	03/15/2006	Page:	
Bldg Type:	Single	Quality:	3.00 AVERAGE
Style:	1.5 Fin	Frame:	No Data
Area:	1760	Yr Built:	2000 Eff Age: 13
# Rms:	7	# Bedrm:	3 # Ktchns: 1
# 1/2 Bath:	0	# Baths:	2

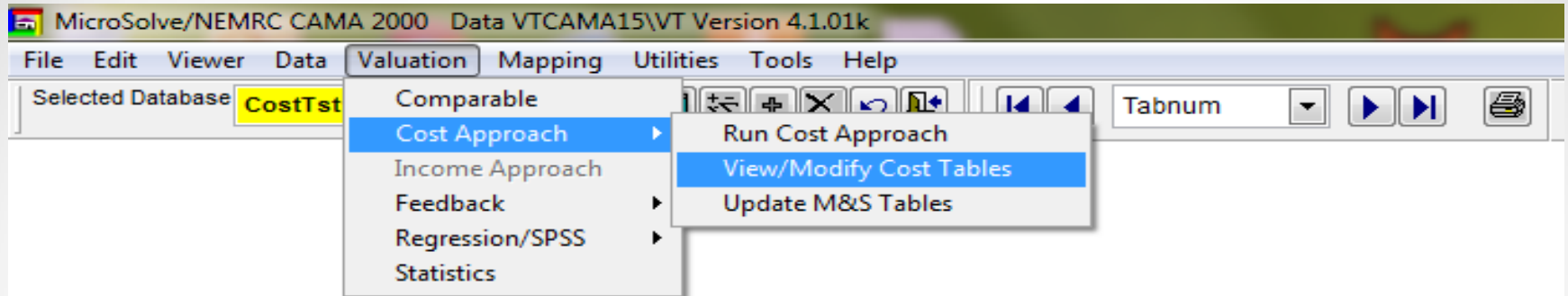


## **Depreciation Table:**

Depreciation tables can be developed and input for:

- Residential Dwellings
  - Mobile Homes
  - Camps

# CAMA System Depreciation



Update Cost Tables

List / Description	Cost Table	Add Page(s)	Excel Table Link
Table Description	Depreciation		
Table Number	40	Verify Table Structure	
Description	Depreciation		Categorical (If Any) 0
Pages	House - Mobile Home - Camp		0
Rows	Effective age		0
Columns	Condition		0
Verify All Table Structures			

# CAMA System Depreciation



## Column 0 Effective Age - Row 1 through 9 Condition

Table	Page	Row	0	1	2	3	4	5	6	7	8	9
40	1	1	1	15	9	3	0	0	0	0	0	0
40	1	2	2	16	12	9	5	1	0	0	0	0
40	1	3	3	17	14	10	7	3	0	0	0	0
40	1	4	4	18	15	11	8	4	1	0	0	0
40	1	5	5	19	16	12	9	5	2	1	0	0
40	1	6	6	20	17	13	10	6	3	2	1	0
40	1	7	7	21	18	14	11	7	4	3	2	0
40	1	8	8	23	19	15	12	8	5	4	3	1
40	1	9	9	24	20	16	13	9	6	5	4	2
40	1	10	10	25	21	17	14	10	7	6	5	3
40	1	11	11	26	22	18	15	11	8	7	5	3
40	1	12	12	27	23	19	16	12	9	8	6	4
40	1	13	13	28	24	20	17	13	10	9	6	4
40	1	14	14	29	25	21	18	14	11	10	7	5
40	1	15	15	30	26	23	19	15	12	10	7	5
40	1	16	16	31	27	23	19	15	12	10	7	5
40	1	17	17	32	28	24	20	16	13	11	8	6
40	1	18	18	33	29	25	20	16	13	11	8	6
40	1	19	19	34	30	26	21	17	14	11	8	6
40	1	20	20	35	31	26	22	17	14	12	9	7
40	1	21	21	36	32	27	22	18	15	12	9	7
40	1	22	22	37	33	28	23	18	15	12	9	7
40	1	23	23	39	34	28	23	18	15	12	9	7
40	1	24	24	40	34	29	24	19	16	13	10	8
40	1	25	25	41	35	30	25	19	16	13	10	8



Table 40, Page 2 - MHO Depreciation

Update Cost Tables

List / Description

Cost Table

Add Page(s)

Excel Table Link

Table #40DepreciationHouse - Mobile Home - Camp2

Rownum	Effective a	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00
0	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	0.00
1	1.00	5.00	4.00	3.00	2.00	1.00	0.00	0.00	0.00
2	2.00	8.00	6.50	5.00	4.00	3.00	2.00	1.00	0.00
3	3.00	12.00	9.75	7.50	6.00	4.50	3.75	3.00	0.00
4	4.00	16.00	13.00	10.00	8.00	6.00	5.00	4.00	0.00
5	5.00	20.00	16.25	12.50	10.00	7.50	6.25	4.00	0.00
6	6.00	24.00	19.50	15.00	12.00	9.00	7.00	5.00	0.00
7	7.00	28.00	22.75	17.50	14.00	10.50	8.75	6.00	0.00
8	8.00	32.00	26.00	20.00	16.00	12.00	10.00	8.00	0.00
9	9.00	36.00	29.25	22.50	18.00	13.50	12.00	10.00	0.00
10	10.00	40.00	32.50	25.00	20.50	16.00	14.00	12.00	0.00
11	11.00	44.00	35.75	27.50	22.75	18.00	16.00	14.00	0.00
12	12.00	48.00	39.00	30.00	25.50	21.00	18.00	16.00	0.00





Table 40, Page 3 – Camp Depreciation

Update Cost Tables										
List / Description			Cost Table			Add Page(s)			Excel Table Link	
Table #		40	Depreciation			House - Mobile Home - Camp			3	
Rownum	Effective a	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	
0	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	
1	1.00	18.75	11.25	3.75	0.00	0.00	0.00	0.00	0.00	
2	2.00	20.00	15.00	11.25	6.25	1.25	0.00	0.00	0.00	
3	3.00	21.25	17.50	12.50	8.75	3.75	0.00	0.00	0.00	
4	4.00	22.50	18.75	13.75	10.00	5.00	1.25	0.00	0.00	
5	5.00	23.75	20.00	15.00	11.25	6.25	2.50	1.25	0.00	
6	6.00	25.00	21.25	16.25	12.50	7.50	3.75	2.50	1.25	
7	7.00	26.25	22.50	17.50	13.75	8.75	5.00	3.75	2.50	
8	8.00	28.75	23.75	18.75	15.00	10.00	6.25	5.00	3.75	
9	9.00	30.00	25.00	20.00	16.25	11.25	7.50	6.25	5.00	
10	10.00	31.25	26.25	21.25	17.50	12.50	8.75	7.50	6.25	
11	11.00	32.50	27.50	22.50	18.75	13.75	10.00	8.75	7.50	
12	12.00	33.75	28.75	23.75	20.00	15.00	11.25	10.00	8.75	



## **Depreciation Calculations:**

**Direct Input**

**Table Lookup: Effective Age Input**

**Table Lookup: Effective Age Calculated**

## Summary

1

Physical Depreciation  
Exists

- If Depreciation exists then use that percentage to calculate RCNLD.

2

Effective Age Exists

- If Physical Depreciation is blank then check if Effective Age is present. If so, use Effective Age and Condition to lookup Depreciation.

3

Year Built Exists

- If Physical Depreciation is blank, and Effective Age is blank, then calculate Effective Age from Base Year. Lookup based on Effective Age and Condition.

# Effective Age

The Effective Age of a residence is its age in years as compared with other residences performing like functions.

It is the actual age less any years that have been taken off by face-lifting, structural reconstruction, removal of functional inadequacies, modernization of equipment, etc.

From Marshall & Swift presentation IAAO conference 2012

**By curing obsolescence we are increasing  
the Economic Life of the Improvement**

## Effective Age – “What you see is what you get”



Consider meeting someone new. You know they are 60, but when you meet them you notice they have taken good care of themselves and appear more like 50.

Their chronological age is 60, but their effective age is 50.

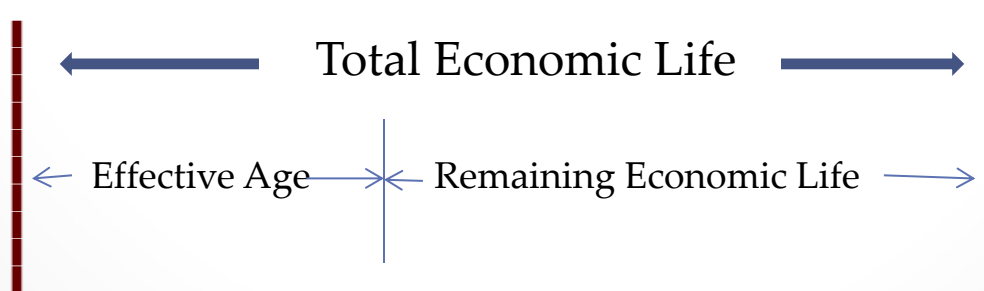


Effective Age may or may not be the same as actual or chronological age.  
Dependent upon:

- Maintenance
- Design
- Location

Effective Age + Remaining Economic Life = Total Economic Life

Effective Age and remaining Economic life equals the total life span of an improvement.





$$\text{Depreciation} = \frac{\text{Effective Age}}{\text{Total Economic Life}}$$

Example: EA 80 / TEL 200 = .40

## Calculating Total Economic Life

Depreciation	0.40	
Effective Age	80	
Annual Percentage	$.40/80 =$	0.005
Total Economic Life	$1/.005 =$	200



## Typical Building Lives

Marshall and Swift

Quality	Single Family		Manufactured		Cabins
	Frame	Masonry	Single	Multi	Frame
Low	45	50	20	25	35
Fair	50	55	20	25	40
Average	55	60	25	30	45
Good	55	60	30	35	50
Very Good	55	60	35	40	---
Excellent	60	65	40	45	---



### Effective Age Problem:

1. Older homes do not work with Typical Building Lives Tables
2. Determination is frequently based on observation.
3. Various levels of experience in application
4. Difficult to explain
5. Difficult to maintain consistency
6. Guess work

### Effective Age Importance

1. Critical variable used with Depreciation tables
2. Provides basis for calculation of RCNLD
3. Critical variable for use with comparable sales
4. Allows for consistency of assessments



Need a way to conceptually determine Effective Age  
for Mass Appraisal

Must be simple to Implement

Easy to Understand

Easy to Explain

Can be Consistently Applied





# Estimating Effective Age by Unit-in-Place Method

\*\*\***A Guideline**\*\*\*

- Similar to Unit-in-Place method of Cost Approach
- Building components segregated into Units of construction
- Recognize each “units” contribution to overall depreciation



## Economic Life of Improvements

- Long Lived Items
  - Basic structure components
  - ↓
  - Likely incurable deterioration



- Short Lived Items
  - Building component replaced several times
  - ↓
  - Likely curable





## **Building Components**

(Accumulated from M&S)

<b><u>Basic Structure : Long Lived Items</u></b>	<b><u>%</u></b>
Excavation/Foundation/basement	15
Framing	20
Rough-in Electrical/Plumbing	15
Total Percentage	50

## **Short Lived Items**

Windows/Exterior Doors	3
Heating/Cooling System	7
Exterior Cover	5
Interior / Painting /Decorating	12
Appliances and Cabinets	13
Plumbing Fixtures	5
Floor Covering	3
Light Fixtures and Hardware	2
Total Percentage	50

# CAMA System Depreciation



## Building Components

(Accumulated from M&S)

### Basic Structure : Long Lived Items

	%		Actual Age		
Excavation/Foundation/basement	15	X	100	=	15
Framing	20	X	100	=	20
Rough-in Electrical/Plumbing	15	X	100	=	15
Total Percentage	50				50

### Short Lived Items

	%		Actual Age		
Windows/Exterior Doors	3	X	10	=	0.3
Heating/Cooling System	7	X	40		2.8
Exterior Cover	5	X	50	=	2.5
Interior / Painting /Decorating	12	X	15	=	1.8
Appliances and Cabinets	13	X	10	=	1.3
Plumbing Fixtures	5	X	10	=	0.5
Floor Covering	3	X	40	=	1.2
Light Fixtures and Hardware	2	X	10	=	0.2
Total Percentage	50				10.6

**Effective Age 60.6**

Base Year is 2016



### Simplified Version

	Years	Percent	Eff Age
Basic Structure	100	50.00%	50
Heating and Flooring	10	10.00%	1
All others	5	40.00%	2
	Effective Age		53
	Say		<b>50</b>



## CAMA System Depreciation



Year Built	Effective Age
------------	---------------

1961 - 2015	Actual Age
-------------	------------

1900 - 1960	40 - 60
-------------	---------

1850 - 1899	60 - 80
-------------	---------

Prior 1850	80 - 100
------------	----------

The Effective Ages depend on the types of upgrades completed.

If an 1860 house has been totally updated it may be in the 30 - 40 range.

These ages are the starting point relative to the condition of the property.



New Construction

Year Built 2015

Actual Age = Effective Age

## CAMA System Depreciation



Year Built 1997

Actual Age = 19

Effective Age = 19



## CAMA System Depreciation



Year Built 1830

Actual Age = 186

$$186 / 2 = 93$$

Effective Age = 90 - 95

# CAMA System Depreciation

**NEMRC**  
FUND ACCOUNTING

## Residential Property Record Card

Date Printed 02/10/16

### Owner Information

Parcel 09.01.12

Owner

1205 NORTH ORANGE STREET  
WILMINGTON, DE 19801

Location 63 BROOKS BUNGALOW RD

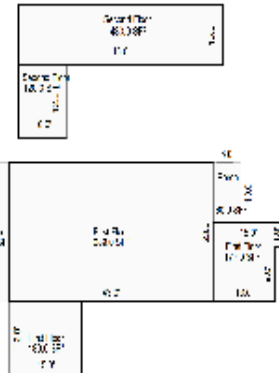
Descr: 47.5 AC & DWL:

### Parcel Value Information

Land Value	405,100	Homestead	501,900
Dwelling Value	73,500	Housesite	315,600
Site Imprmnt	20,000		
Outbuildings	3,300		
Misc. Adj.	0		
Total	501,900		



09.01.12



Sketch Updated: 10/29/14

### Parcel Information

Tax Map #	09.01.12.	NBHD	13
Span	786-250-10359	Acres	47.50
Status	A - Active	Last Update	02/10/16

### Sales Information

Book	253	Sale Date	12/14/15
Page	243-246	Sale Price	500,000

BUILDING	Total Rooms	8	Year Built	1830	Building SF	1896	Energy Adj	Average	Roughins	1
	Bedrooms	5	Effect Age	95	Quality	3.00	Bsmt Wall	Stone	Plumb Fixt	5
	Full Baths	1	Condition	Average	Style	1.5 Fin	Bsmt SF	644	Fireplaces	0
	Half Baths	0	Phys Depr	54	Design	CapeCod	Bsmt Fin	UnFinsh	Porch	221
	Kitchens	1	Funct Depr	10	Bldg Type	Single	Bsmt Fin SF	0	Gar/Shed	0
			Econ Depr	0					% Complete:	0
LAND	CALC	Site	LAND	Bldg Lot	AREA	2.00	GRADE	1.25	FRONTAGE	0.00
		Acreage		Other		45.50		0.80		0.00

Why Functional Depreciation?

# CAMA System Depreciation

**NEMRC**  
FUND ACCOUNTING

From Table: MAIN Section 1		Itemized Property Costs TOWN OF WOODSTOCK 16			Record # 1581		
Property ID: 09.01.12		Span #: 786-250		Last Inspected: 10/29/2014		Cost Update: 02/10/2016	
Owner(s):		Sale Price: 500,000		Book: 253		Validity: Yes	
		Sale Date: 12/14/2015		Page: 243-2			
Address: 1205 NORTH ORANGE STREET		Bldg Type: Single		Quality: 3.00		AVERAGE	
City/St/Zip: WILMINGTON DE 19801		Style: 1.5 Fin		Frame: Studded			
Location: 63 BROOKS BUNGALOW RD		Area: 1896		Yr Built: 1830		Eff Age: 95	
Description: 47.5 AC & DWL:		# Rms: 8		# Bedrm: 5		# Ktchns: 1	
Tax Map #: 09.01.12.		# 1/2 Bath: 0		# Baths: 1			
Item	Description	Percent	Quantity	Unit Cost	Total		
BASE COST							
Exterior Wall #1:	WdSidng / Ht=8	100.00		75.64			
ADJUSTMENTS							
Roof #1:	Mtl-Sms	100.00		1.12			
Subfloor	Wood						
Floor cover #1:	Allowance	100.00		3.93			
Heat/cooling #1:	ForcAir	100.00					
Energy Adjustment	Average						
ADJUSTED BASE COST			1,896.00	80.69	152,988		
ADDITIONAL FEATURES							
Fixtures (beyond allowance of 8)			-3.00	1,360.00	-4,080		
Roughins (beyond allowance of 1)				550.00			
Porch #1:	WoodDck/NoWall/Roof/C		161.00	35.83	5,769		
Porch #2:	WoodDck/NoWall/Roof/N		60.00	42.67	2,560		
Basement	Stone		644.00	24.49	15,772		
Subtotal					173,008		
Local multiplier		1.18					
Current multiplier		1.00					
REPLACEMENT COST NEW					204,149		
Condition	Average	Percent					
Physical depreciation		54.00	-110,241				
Functional depreciation		10.00	-20,415				
Economic depreciation							
REPLACEMENT COST NEW LESS DEPRECIATION					73,500		
LAND PRICES							
SI Bldg Lot	Size	Nbhd Mult	Grade	Depth/Rate			
AC Other	2.00	1.00	1.25		218,800		
Total	45.50	1.00	0.80		186,300		
					405,100		
SITE IMPROVEMENTS							
Water	Hsite/Hstd	Quantity	Quality				
Sewer	y / y	Typical	Average	5,000			
Total	y / y	Typical	Average	15,000			
					20,000		
OUTBUILDINGS							
Mat storag	Hsite/Hstd	% Good	Size	Rate.	Extras		
Total	y / y	85	177	18.84		3,300	
					3,300		
TOTAL PROPERTY VALUE					501,900		



# CAMA System Depreciation

**NEMRC**  
FUND ACCOUNTING

## Residential Property Record Card

Date Printed 02/10/16

### Owner Information

Parcel 33.02.15

Owner [REDACTED]

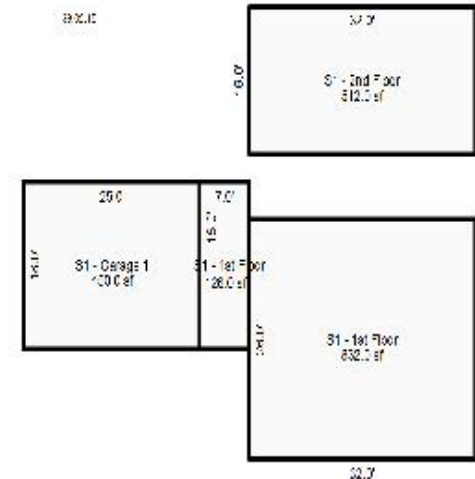
PO BOX 173  
S WOODSTOCK, VT 05071

Location 5014 SOUTH RD

Descr: .53 AC & DWL:

### Parcel Value Information

Land Value	85,400	Homestead	273,200
Dwelling Value	167,800	Housesite	273,200
Site Imprmnt	20,000		
Outbuildings	0		
Misc. Adj.	0		
<b>Total</b>	<b>273,200</b>		



Sketch Updated: 11/23/15

### Parcel Information

Tax Map #	33.02.15.	NBHD	6
Span	786-250-11160	Acres	0.53
Status	A - Active	Last Update	02/10/16

### Sales Information

Book	243	Sale Date	10/03/13
Page	154	Sale Price	275,000

BUILDING	Total Rooms	6	Year Built	1852	Building SF	1470	Energy Adj	Good	Roughins	1
	Bedrooms	2	Effect Age	60	Quality	3.75	Bsmt Wall	Stone	Plumb Fixt	5
	Full Baths	1	Condition	Good	Style	1.5 Fin	Bsmt SF	832	Fireplaces	0
	Half Baths	0	Phys Depr	24	Design	CapeCod	Bsmt Fin	UnFinsh	Porch	0
	Kitchens	1	Funct Depr	0	Bldg Type	Single	Bsmt Fin SF	0	Gar/Shed	450
			Econ Depr	0					% Complete:	0

LAND	CALC	Site	LAND	Bldg Lot	AREA	0.53	GRADE	1.15	FRONTAGE	0.00
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NOTES: House renovated before sale.

# CAMA System Depreciation



## Building Components

(Accumulated from M&S)

### Basic Structure : Long Lived Items

	%		Actual Age		
Excavation/Foundation/basement	15	X	164	=	24.6
Framing	20	X	164	=	32.8
Rough-in Electrical/Plumbing	15	X	40	=	6
Total Percentage	50				63.4

### Short Lived Items

	%		Actual Age		
Windows/Exterior Doors	3	X	3	=	0.09
Heating/Cooling System	7	X	3		0.21
Exterior Cover	5	X	3	=	0.15
Interior / Painting /Decorating	12	X	3	=	0.36
Appliances and Cabinets	13	X	3	=	0.39
Plumbing Fixtures	5	X	3	=	0.15
Floor Covering	3	X	3	=	0.09
Light Fixtures and Hardware	2	X	3	=	0.06
Total Percentage	50				1.5

**Effective Age 64.9**

Base Year is 2016

# CAMA System Depreciation

**NEMRC**  
FUND ACCOUNTING

From Table: MAIN    Section 1		Itemized Property Costs		TOWN OF WOODSTOCK 16		Record # 3453	
Property ID: 33.02.15		Span #: 786-250-11160		Last Inspected: 10/14/2015		Cost Update: 02/10/2016	
Owner(s):    HAWTHORN DEBORAH Y		Sale Price:    275,000		Book:    243		Validity: Yes	
Address:    PO BOX 173		Sale Date:    10/03/2013		Page:    154			
City/St/Zip:    S WOODSTOCK VT 05071		Bldg Type: Single		Quality:    3.75		AVG/GOOD	
Location:    5014    SOUTH RD		Style:    1.5 Fin		Frame:    Studded			
Description: .53 AC & DWL:		Area:    1470		Yr Built:    1852		Eff Age:    60	
Tax Map #:    33.02.15.		# Rms:    6		# Bedrm:    2		# Ktchns:    1	
		# 1/2 Bath:    0		# Baths:    1			
Item	Description	Percent	Quantity	Unit Cost	Total		
BASE COST							
Exterior Wall #1:	WdSidng / Ht=8	100.00		95.88			
ADJUSTMENTS							
Roof #1:	Mtl-Sms	100.00		0.90			
Subfloor	Wood						
Floor cover #1:	Allowance	100.00		3.93			
Heat/cooling #1:	ForcAir	100.00					
Energy Adjustment	Good			1.92			
ADJUSTED BASE COST			1,470.00	102.63	150,858		
ADDITIONAL FEATURES							
Fixtures (beyond allowance of 8)			-3.00	1,971.25	-5,914		
Roughins (beyond allowance of 1)				658.75			
Basement	Stone		832.00	26.06	21,682		
Garage/Shed #1:	A/1.5S/WdSidng/No		450.00	45.46	20,459		
Subtotal					187,084		
Local multiplier			1.18				
Current multiplier			1.00				
REPLACEMENT COST NEW					220,759		
Condition	Good	Percent					
Physical depreciation			24.00		-52,982		
Functional depreciation							
Economic depreciation							
REPLACEMENT COST NEW LESS DEPRECIATION					167,800		
LAND PRICES							
SI Bldg Lot	Size	Nbhd Mult	Grade	Depth/Rate			
	0.53	0.85	1.15		85,400		
Total			0.53		85,400		
SITE IMPROVEMENTS							
Water	Hsite/Hstd	Quantity	Quality				
	y / y	Typical	Average		5,000		
Sewer	y / y	Typical	Average		15,000		
Total					20,000		
TOTAL PROPERTY VALUE					273,200		
NOTES					HOUSESITE VALUE :    .		
					HOMESTEAD VALUE :    .		
House renovated before sale.					273,200		



## Summary

Unit-in-Place approach provides a Guideline

Importance of consistency

Use with caution for high value historic properties







## Information Sources



“A Mass Appraisal Approach to Developing Effective Age Tables for Residential Mass Appraisal”

Mary Jo Staroska, CAA 1998

“Estimation and Use of Effective-Age and Evaluation of Depreciation Schedules in the Mass Appraisal Process”

Gary McCabe, CAE 1995 IAAO Publication

## CAMA System Depreciation

**NEMRC**  
FUND ACCOUNTING

The following **example** demonstrates how the estimate of Effective Age for a Single Family Residence is derived. Utilizing the Sales Comparables within the appraisal report, a range of effective ages can be developed. Since the Comparables selected have been deemed by the appraiser to be the most comparable to the subject from the market, support for an opinion of effective age can be substantiated.

### Chronological Age of Subject – 35 Years

1. **Sale Price** of Comparable #1 – Age Equal to Subject: \$167,900
2. Subtract the estimated land value (the site) from the sale price. - 33,600
3. Value attributable to the depreciated improvements \$134,300
4. Replacement cost of the home and other improvements from the appraisal:

House	(2,200 sq. ft. x \$100.20) =	\$220,440
Garage	=	12,100
Site Improvements	=	<u>3,600</u>
Total Replacement Cost		\$236,140
5. Calculate the Total Depreciation by subtracting the value attributable to the improvements from the replacement cost new. Depreciation abstracted includes all forms of depreciation. (Step 3) from the reproduction cost (Step 4)  
**Total Depreciation:** \$236,140 - \$134,300 = **\$101,840**  
**(Market Abstracted)**
6. Percentage Depreciation of the improvements: (\$101,840 / \$236,140) 43.13%
8. Economic Life: 55 Years x 43.13% = 23.72
9. Effective Age Estimate: **SAY** 24 Years
10. **Chronological Age (35)                      Effective Age of Comparable (24)**

If this process is repeated to the other Comparables, a simple range is developed and the appraiser could reasonably determine an effective age by comparison for the subject property. If the Sale Price of the subject is known, the same method of abstraction could be used on the subject, thus giving the appraiser an indication where the subject property falls within the market.

